WHAT KIND OF FINANCE SHOULD THERE BE?

SAULE T. OMAROVA*

I

INTRODUCTION

In recent decades, most developed economies around the world have been increasingly exhibiting a particular structural trend popularly labeled "financialization."[1] On the most general level, this capacious term refers to the "increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies."[2] Although academics working in various disciplines began exploring the many facets of financialization well before the global financial crisis of 2008, the crisis gave these efforts a new sense of urgency.[3] The crisis vividly demonstrated the far-reaching and devastating socioeconomic and political consequences of allowing the financial system to grow increasingly large, risky, and complex.

In the economic literature, the crisis has revived a long-standing debate on the causal link between growth of the financial system, on the one hand, and broader economic growth, on the other.[4] As an influential paper by Arcand, Berkes, and Panizza put it, the crisis "raised concerns that some countries may

This Article is also available online at http://lcp.law.duke.edu/.

* Saule T. Omarova is the Beth and Marc Goldberg Professor of Law at Cornell University. I would like to thank Anna Gelpern and Adam Levitin, the organizers of the Law and Macroeconomics Conference at Georgetown Law on September 27–28, 2019. Special thanks to Heather Boushey for her detailed and thoughtful comments on an earlier draft of this Article and to Bob Hockett, my frequent co-author and co-conspirator.

1. For a succinct analysis of the current debate on, and the underlying dynamics of, financialization, see Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 CORNELL L. REV. 1143, 1211–15 (2017) [hereinafter *Finance Franchise*].

2. GERALD A. EPSTEIN, FINANCIALIZATION AND THE WORLD ECONOMY 3 (2005).

3. *See, e.g., id.*; GRETA R. KRIPPNER, CAPITALIZING ON CRISIS 27–28 (2011); Ken-Hou Lin & Donald Tomaskovic-Devey, *Financialization and U.S. Income Inequality, 1970–2008*, 118 AM. J. SOC. 1284 (2013); Thomas I. Palley, *Financialization: What It Is and Why It Matters* (The Levy Econ. Inst., Working Paper No. 525, Dec. 2007), http://papers.ssrn.com/sol3/papers.cfm/ ?abstract_id=1077923 [https://perma.cc/FTU2-EFVA]; Ing-Haw Cheng & Wei Xiong, *The Financialization of Commodity Markets* (Nat'l Bureau of Econ. Reeach, Working Paper No. 19642, Oct. 2013), http://papers./ ssrn.com/sol3/papers.cfm?abstract_/ id=2350243 [https://perma.cc/2JJP-MUUZ].

4. For examples of the pre-crisis economic literature on this subject, see generally Robert G. King & Ross Levine, *Finance and Growth: Schumpeter Might Be Right*, 108 Q.J. ECON. 717 (1993); Ross Levine et al., *Financial Intermediation and Growth: Causality and Causes*, 46 J. MONETARY ECON. 31 (2000); Raghuram G. Rajan & Luigi Zingales, *Financial Dependence and Growth*, 88 AM. ECON. REV. 559 (1998).

have financial systems which are 'too large' compared to the size of the domestic economy."[5] Provocatively titled *Too Much Finance?*, their paper shows that there can be "too much" finance, insofar as excessive growth of total private-sector credit has a negative effect on economic growth.[6] The paper generated a great deal of public interest and discussion,[7] as well as subsequent research supporting and elaborating its findings.[8]

This Article takes the economic literature on the relationship between the size of the financial sector and economic growth as a starting point for broadening and deepening the inquiry into the *qualitative* aspects of their relationship. Adopting a deliberately law and policy oriented perspective, it shifts the discussion beyond the economists' question "Can there be too much finance?" to the bigger and more complicated question, "*What kind* of finance should there be?" This Article's purpose is to engage in a high-level exploration of an effective *macro-systemic* approach to financial markets and regulation, which explicitly ties together the traditionally technical issues of financial stability and innovation and the broader issues of sustainable and structurally-balanced socioeconomic development.

The Article proceeds as follows. Part II provides a conceptual framing for the discussion by shifting its focus from quantitative to qualitative aspects of the complex interrelationship between finance and macro-economy. It accordingly defines the core inquiry not in terms of measuring the size of the financial sector vis-à-vis total economic output, but in terms of unpacking the complex interdependency between the internal dynamics of finance and the levels of socioeconomic development enabled by it. Applying this macro-systemic approach, Part III examines the popular but under-theorized concept of financial innovation from the perspective of its potential impact on productive economic enterprise. Tracing the flow of causality from macro-economy back to finance, Part IV then explores the potential impact of a well-designed strategy of economic development on the long-term stability and resilience of the financial system.

5. Jean-Louis Arcand, Enrico Berkes & Ugo Panizza, *Too Much Finance?* 4 (Int'l Monetary Fund, Working Paper WP/12/161, June 2012), https://www.imf.org/external/pubs/ft/wp/2012/wp12161.pdf [https://perma.cc/PH6Q-GCQM].

6. Specifically, their paper finds that "finance starts having a negative effect on output growth when credit to the private sector reaches 100% of GDP." *Id.* at 1.

7. *See, e.g.,* Joe Pinsker, *Does Finance Do Any Good For Society?* THE ATLANTIC (Feb. 5, 2015), https://www.theatlantic.com/business/archive/2015/02/does-finance-benefit-society/385176/ [https://perma.cc/934U-L86J]; Martin Wolf, *Why Finance Is Too Much of a Good Thing*, FT. COM (May 26, 2015), https://www.ft.com/content/64c2f03a-03a0-11e5-a70f-00144feabdc0 [https://perma.cc/9KQX-C3LY].

8. *See, e.g.,* Ratna Sahay et al., *Rethinking Financial Deepening: Stability and Growth in Emerging Markets,* (Int'l Monetary Fund Staff Discussion Note SDN/15/08, May 2015), https://www.imf.org/external/pubs/ft/sdn/2015/sdn1508.pdf [https://perma.cc/42NA-F3Y4]; Luigi Zingales, *Does Finance Benefit Society?* (Nat'l Bureau of Econ. Research, Working Paper 20894, Jan. 2015), https://www.nber/.org/papers/w20894.pdf [https://perma.cc/YR4S-SDTD].

II

FINANCE AND THE ECONOMY: A MACRO-SYSTEMIC PERSPECTIVE

A. Asking the Right Question: From "How Much?" to "What Kind?"

Answering the question in the title of this Article requires a conceptual framework: a coherent narrative of what the financial system is and how it functions. The currently dominant narrative defines the essential function and dynamics of the financial system in terms of "financial intermediation." In this orthodox picture, the financial system enables the flow of scarce funds from one group of private actors ("savers" or "surplus units") to another group of private and public actors ("users" or "deficit units"), with the risk-mitigating assistance of professional "intermediaries."[9] Government instrumentalities are relegated to performing "mainly secondary functions, regulating and otherwise supporting the operation of the essentially private financial marketplace from the outside."[10]

Its ubiquity notwithstanding, this financial intermediation orthodoxy provides only a partial—and unavoidably distorted—view of what actually happens in the financial system. In fact, the modern financial system is more accurately described as a public-private franchise arrangement, in which private financial institutions—"franchisees"—are licensed to manage the distribution of the sovereign public's—the "franchisor's"—full faith and credit.[11] The fundamental purpose of this franchise arrangement is to supply the macro-economy with sufficient credit to support productive enterprise. That involves both "(1) maintaining appropriate aggregates of credit, and (2) allocating that credit—in each case, to ensure full utilization of the economy's productive capacity."[12] Because of its superior ability to take a macro-level view, the sovereign public, acting primarily through the central bank, performs the task of *modulating* the credit supply. The task of *allocating* capital to specific uses, however, is reserved for private actors, with their ostensibly superior ability to gather and process vital market information at the micro level.[13]

From this perspective, "financialization" emerges as a dysfunctional mode of interaction between the financial system and the real (that is, non-financial) economy, in which an ever-greater proportion of capital flows is continuously re-absorbed by the former rather than flowing to the latter. Causally, it reflects both

9. For textbook versions of this narrative, see ZVI BODIE & ROBERT C. MERTON, FINANCE 22–23 (2000); BARBARA CASU ET AL., INTRODUCTION TO BANKING 18 (2006); RICHARD SCOTT CARNELL ET AL., THE LAW OF FINANCIAL INSTITUTIONS 37 (5th ed. 2013); STEPHEN G. CECHETTI & KERMIT SCHOENHOLTZ, MONEY, BANKING, AND FINANCIAL MARKETS 39 (3d ed. 2008); STUART I. GREENBAUM & ANJAN V. THAKOR, CONTEMPORARY FINANCIAL INTERMEDIATION 55–58 (2007); KENT MATHEWS & JOHN THOMPSON, THE ECONOMICS OF BANKING 33 (2005).

10. *Finance Franchise*, *supra* note 1, at 1145.

11. For a comprehensive theoretical account of the structure and operation of the U.S. financial system as a public-private franchise arrangement, see *id.*

12. *Id.* at 1213.

13. *Id.* For more on the modulation task, see generally Robert C. Hockett, *A Fixer-Upper for Finance*, 87 WASH. U. L. REV. 1213 (2010).

(1) the failure of the central bank to modulate credit aggregates in a manner that prevents excess private credit-generation; and (2) the systematic misallocation of credit by private financial institutions diverting it to uses other than investment in productive enterprise.

These interrelated and mutually-reinforcing dysfunctionalities provide a conceptual explanation for why there can be "too much finance." Most obviously, it would happen in situations where the relevant monetary authorities are unable or unwilling to impose effective constraints on the growth of private credit beyond what is needed to ensure full utilization of the economy's productive capacity. This over-generation of credit is a major cause of financial instability and, ultimately, slower economic growth. The financial crisis of 2008, followed by an economic recession and political turmoil, is a vivid example of these dynamics.

The intimate interconnection between credit modulation and credit allocation, however, renders this quantity-focused explanation inherently incomplete. In practice, systemically destabilizing asset price booms stem directly from—and reinforce—socially suboptimal allocative decisions by private financial market participants. It is well known, for example, that one of the principal causes of the 2008 financial crisis was the unrestrained flow of speculative investment into the U.S. housing sector. By allowing this systematic misallocation of credit and the concomitant accumulation of hidden leverage to continue unabated until the market could no longer sustain it, the Federal Reserve effectively abandoned its modulatory function and ceded control over credit supply to private actors.[14] The inevitable market collapse in the fall of 2008, in effect, exposed these dysfunctional dynamics on both sides of the public-private division of roles in today's financial system.

Yet, in the post-2008 world, both the actual regulatory reforms in the financial sector and the academic debate on financial stability and crisis prevention continue to focus almost entirely on one side of this dual-track problem: how to *modulate* credit aggregates more effectively. Thus, the bulk of post-crisis regulatory reforms aim principally to reduce the danger of over-leveraging—and thus excessive risk-taking—on the part of individual banks and other financial institutions.[15] In this sense, the evolving arsenal of post-crisis solutions to the financial system's dysfunctions consists mainly of traditional *microprudential* regulatory tools—such as capital adequacy ratios, liquidity requirements, and consolidated oversight—strengthened and repurposed as post-crisis tools of *macroprudential* regulation and supervision.[16]

14. *See Finance Franchise*, *supra* note 1, at 1214.

15. For an overview of these reforms, see Saule T. Omarova*, The "Too Big To Fail" Problem*, 103 MINN. L. REV. 2495, 2504–10 (2019).

16. For background information on macroprudential regulation, see generally INT'L MONETARY FUND, MACROPRUDENTIAL POLICY: AN ORGANIZING FRAMEWORK (2011), https://www.imf.org/external/np/pp/eng/2011/031411.pdf [https://perma.cc/Q5LG-8TQF]; Robert C. Hockett, *The Macroprudential Turn: From Institutional 'Safety and Soundness' to Systematic 'Financial Stability' in Financial Supervision*, 9 VA. L. & BUS. REV. 201 (2015); Gabriele Galati & Richhild Moessner,

The newly-intensified academic debate on the proper scope and tools of monetary policy represents another aspect of the post-crisis push to improve central banks' ability to modulate credit on an economy-wide basis. To great extent, the current resurgence of interest in this notoriously technical subject is a reaction to the dramatic growth of central banks' balance sheets as a result of their crisis containment and rescue actions, as well as the continuing expansion of their de facto mandates in the post-crisis era. The post-crisis attempts to stimulate economic growth by keeping interest rates at or even below zero further escalated and politicized these discussions.[17]

A closely related strand in the ongoing reform debate focuses on the proper methods of backstopping the financial system in the event central banks' and other regulators' modulation efforts prove ineffective. These include, for example, the post-crisis creation of special "orderly liquidation" regimes and creditor "bail-in" requirements for systemically important financial institutions (SIFIs). However, the key method of "panic-proofing" the system seems to require some form of extended guaranteed access to central banks' liquidity backup and other infrastructural support facilities.[18]

In sum, preventing excess accumulations of leverage in the financial system—or the *modulation* task—remains the primary driver of the post-crisis process of debating, devising, and implementing regulatory reforms. By contrast, to date, there has been no meaningful debate on improving the system-wide *allocation* of financial resources to productive enterprise.[19] In most, if not all, post-crisis discussions on financial regulation, the underlying presumption remains that private market actors are inherently better at assessing financial risks and spotting potentially beneficial investment opportunities "on the ground." Accordingly, the existing dysfunctions in the process of system-wide credit allocation are framed predominantly in terms of specific private incentive misalignments or more general political-economy frictions.[20]

This one-sided approach to making the financial system "safer" invisibly and inevitably undermines the efficacy of the post-crisis regulatory reform process. Despite the ongoing efforts to strengthen macroprudential oversight of financial

---

Macroprudential Policy—A Literature Review (Bank for Int'l Settlements, Working Paper No. 337, 2011), www.bis.org/publ/work337.pdf [https://perma.cc/VGG2-W4AR].

17. *See, e.g.*, Bill Dudley, *Fed Shouldn't Enable Donald Trump*, BLOOMBERG (Aug. 27, 2019), https://www.bloomberg.com/opinion/articles/2019-08-27/the-fed-shouldn-t-enable-donald-trump?srnd=opinion [https://perma.cc/DK5G-4YW7].

18. *See, e.g.*, PERRY MEHRLING, THE NEW LOMBARD STREET: HOW THE FED BECAME THE DEALER OF LAST RESORT (2010); HAL S. SCOTT, CONNECTEDNESS AND CONTAGION (2016); Kathryn Judge, *The Guarantor of Last Resort*, 97 TEX. L. REV. 707 (2019).

19. Thus, a recent strand in the corporate governance literature, advocating the so-called "stakeholder" theory of a business corporation, could be viewed as dealing with issues of allocative efficiency, but only indirectly and principally on a micro-level. *See, e.g.,* THE CAMBRIDGE HANDBOOK OF STAKEHOLDER THEORY (Jeffrey S. Harrison et al. ed., 2019) (providing a broad view of recent scholarship in this area).

20. "Financial inclusion" and "access to credit" are perhaps the most representative themes in the latter category.

institutions and markets, persistent economy-wide misallocation of credit continues to play a critical role in destabilizing the financial system. In fact, the failure to recognize and remedy the deep-seated problems in the dynamics of credit allocation keeps resurfacing in various contexts, feeding the anti-regulatory rhetoric of "unanticipated consequences" of post-crisis reforms. For example, one of the most frequently and successfully used deregulatory arguments of the banking industry is that post-crisis macroprudential rules constrain banks' ability to extend credit to businesses, which directly impedes economic growth. While obviously self-serving, this argument nevertheless hits at a very real and systematic set of problems in the process of credit allocation.[21] The recent rollback or significant softening of various provisions of the Dodd-Frank Act—including, in particular, the evolving regime of enhanced prudential oversight of large bank holding companies and nonbank SIFIs—shows how successfully this rhetoric is used in financial industry lobbying efforts.[22]

Instead of reversing the partial regulatory reforms already under way, however, we should redirect our attention to this missing half of the solution to the financial system's fundamental problems. It means we need to start looking at the interplay of financial stability and economic growth through the lens of system-level capital *allocation*. In other words, we have to shift the policy debate from the familiar question "Is there too much finance?" to the more meaningful query: "What kind of finance should there be?"

B. Focusing the Inquiry: From "Growth" to "Development"

In order to focus this qualitative inquiry into the nature of finance, it is important to define the other variable in the equation. The economic literature, discussed above, examines the causal link between the size of the financial system and economic *growth*, measured generally in quantitative terms. Purely quantitative growth measures such as GDP, however, do not capture many qualitative aspects of society's material well-being, nor do they reflect key structural factors that shape the relevant economy's operation and determine its ability to sustain growth in the long run.[23] These factors include, among other things, persistent sectoral imbalances, geographic concentrations of economic activity, patterns of employment and related income levels, environmental sustainability, population mobility, and access to and quality of public goods. Financial resources may be allocated in ways that maintain, amplify, or counteract these structural trends—and thus ultimately determine not only the

21. *See* Omarova, *supra* note 15, at 2519–21.

22. *See* Economic Growth, Regulatory Relief, and Consumer Protection Act, Pub. L. 115-174, 132 Stat. 1296 (May 24, 2018), https://www.congress.gov/115/plaws/publ174/PLAW-115publ174.pdf [https://perma.cc/597W-SWVE] (repealing or significantly weakening various provisions of the Dodd-Frank Act).

23. *See, e.g.*, Mijin Cha, *What's Missing From GDP?*, DEMOS.ORG (Jan. 2013), https://www.demos.org/sites/default/files/publications/GDP-Explainer.pdf [https://perma.cc/SB3G-S92Y]; *Trouble With GDP*, THE ECONOMIST (Apr. 30, 2016), https://www.economist.com/briefing/2016/04/30/the-trouble-with-gdp [https://perma.cc/S5FC-YDQQ].

quantity of wealth but also the pattern of wealth distribution in the polity. In that sense, "getting finance right" is not merely a technocratic exercise: it involves fundamental normative choices regarding the principal purposes and social functions of finance.

It is, therefore, critical to focus the inquiry on the more expansive and multi-layered concept of economic *development*, instead of the narrower notion of growth. The difference, of course, is not merely semantic. Economic development is not a static end-state but a continuous project. Development is a conscious collective pursuit of qualitative—as opposed to purely quantitative—growth and adaptation to new environments. Thus, any "developed" nation that does not strive to develop risks losing its global competitive edge.[24] In this sense, economic development is not merely an aggregate outcome of the myriad of micro-level transactions in private markets—it is an inherently *political* project.

Furthermore, this national developmental project is a fundamentally *public-private enterprise*. Contrary to an orthodox presumption, micro-optimizing by private actors does not automatically lead to optimal macro-benefits for the public; delivering such benefits requires an active pursuit of a coherent strategy. As the ultimate public, collective actor, the government is in the best position to formulate such a national developmental strategy.[25] Successful implementation of this strategy, moreover, would require the government to utilize, deliberately and systematically, the tools of modern finance. Finance is the principal link connecting the state and the market: it is both the lifeblood of the economy and "the nerves of the state."[26] It is a universal productive input that can be moved and deployed for a multitude of purposes.[27] All of this makes finance a particularly potent lever of economic and political power. It also makes it critical that public instrumentalities act directly *within* the financial markets, as endogenous market participants, as opposed to purely exogenous market regulators.[28]

Of course, shifting the focus from quantitative growth metrics to qualitative developmental factors immediately complicates the inquiry. What does, and what does not, constitute a desirable developmental outcome in any particular context is bound to be a contestable issue.[29] This Article, however, neither advances a comprehensive political agenda nor advocates any specific economic program. The purpose here is to outline some of the core principles and constitutive elements of an effective *macro-systemic approach* to financial markets and

24. Robert C. Hockett & Saule T. Omarova, *Public Actors in Private Markets: Toward a Developmental Finance State*, 93 WASH. U. L. REV. 103, 115 (2015) [hereinafter *Public Actors*].

25. *Id.*

26. Meredith Woo-Cumings, *Introduction: Chalmers Johnson and the Politics of Nationalism and Development*, *in* DEVELOPMENTAL STATE 10 (1999) (quoting Jean Bodin).

27. *See* JOHN ZYSMAN, GOVERNMENTS, MARKETS, AND GROWTH: FINANCIAL SYSTEMS AND THE POLITICS OF INDUSTRIAL CHANGE 76–77 (1983) (discussing the "universality" of finance as a policy tool).

28. For an in-depth argument, see generally *Public Actors*, *supra* note 24.

29. *See generally* sources cited *supra* notes 24–27.

regulation. It is inherently a *meta-level* exploration, an intellectual exercise in framing—or reframing—the research agenda in the evolving area of law and finance.

Three general points are worth emphasizing in this connection.

First, in order to uncover and examine the deeply complex structural and relational linkages and interdependencies between the financial system and the non-financial economy, it is crucial to shift the focus from the predominantly *micro-level, transactional* phenomena to the more explicitly *macro-level, structural* ones. Today, much of the academic and policy law-and-finance discourse is methodologically and substantively grounded in, and revolves around, fundamentally micro-level, transactional dynamics.

Even in the post-crisis era, the core tools of financial regulation—capital adequacy rules, stress testing, resolution plans, limits on bank portfolio concentrations, and even activity restrictions—continue to target individual financial firms' solvency and liquidity. In this sense, as noted above, the post-crisis emphasis on macro-prudential regulation is an incremental adjustment of the familiar micro-prudential regulatory regime.[30] An implicit—and erroneous—assumption behind this approach is that "getting it right" on the micro-transactional level will more or less automatically produce the right macro-systemic outcome. To correct this bias, regulators and academics must recognize and target the macro-level structural factors in their own right, directly and explicitly.

Second, focusing the inquiry on the role of finance as the engine of structurally-balanced and socially-inclusive economic development both necessitates and enables a fundamental shift in the underlying *philosophy* of financial regulation. The currently dominant model of financial regulation is deeply technocratic in character.[31] Its preferred methods of operation are based on identifying and isolating discrete micro-level phenomena and decision points, and using minimally-invasive technical tools to address specific market inefficiencies. It systematically prioritizes regulatory solutions based on, and explicitly justified by reference to, economic theory or empirical data. In this context, "good" financial regulation reflects judgments that are not only carefully limited but also facially objective, politically neutral, and technically expertized.

Even decisions with obvious distributional effects are typically framed in the sterile language of economic efficiency or necessity.[32] This implicit *bias against normativity* renders financial regulators inherently uneasy with any potential choices that involve overtly political determinations or require taking aggressive

30. *See supra* notes 15–16 and accompanying text.

31. For a discussion of the currently dominant technocratic model of financial regulation and its key implications, see generally Saule T. Omarova, *Technology v. Technocracy: Fintech as a Regulatory Challenge*, 6 J. FIN. REG. (forthcoming 2020).

32. Formal cost-benefit rule analysis required or expected from regulatory agencies reflects and reinforces these dynamics. *See generally* John C. Coates, IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 YALE L.J. 882 (2015).

normative stands. By contrast, re-asserting the fundamental significance of capital allocation, both as a matter of financial stability and as a matter of economic development, places normativity at the heart of the regulatory process. This shift away from the technocratic model of financial regulation, with its built-in micro-transactional bias, creates the vital intellectual space for the emergence of a more normatively embedded and socially beneficial financial system.

Finally, focusing the academic and policy debate on the dynamic interaction between finance and economic development, defined in deliberately qualitative and normatively-grounded terms, brings to the forefront the central role of *law*—a macro-level phenomenon—in shaping financial and economic outcomes. It is difficult to overestimate the potential significance of this shift. Standard economic concepts and narratives heavily dominate today's discourse on finance and its regulation. By recasting legal problems and solutions as mere subsets of micro-economic ones, the mainstream law and economics scholarship presumptively subordinates law to economics—thus effectively denying law its place as a functionally and normatively distinct social sphere.

Recognizing and prioritizing the macro-systemic, structural determinants of financial and economic development on the regulatory agenda flips this artificial hierarchy. It highlights the role of law as the principal channel for transmitting key political and normative judgments, derived through the process of democratic deliberation, into economic policy. Once we stop relying on an erroneous assumption that targeting micro-economic transactions is the best method of achieving macro-economic objectives, it is easy to see why law, in many ways, comes before economics in both (1) defining these objectives, and (2) channeling society's financial resources toward the achievement of these objectives.

Accordingly, it is now possible to rephrase the title question of this Article in more explicitly functional terms: "How can we ensure that the financial system consistently allocates capital to productive non-financial enterprises, for purposes of facilitating structurally-balanced and socially-inclusive economic development?"

This core question should drive not only policy-making but also the academic research agenda in law and finance. Although framing the problem in this way is bound to generate a wide range of potentially competing answers and policy prescriptions, it nevertheless establishes an important normative baseline for the debate. It unifies the debate around a simple but powerful intuition that a functionally healthy financial system and the healthy functioning of the real economy are two sides of the same coin.

The rest of this Article unpacks and concretizes this deep interdependency between finance and macro-economy by focusing on two of its most conspicuous manifestations. Part III examines the basic dynamics of financial innovation as a macro-systemic, as opposed to micro-transactional, phenomenon. Then, Part IV explores the untapped potential of a more proactive developmental strategy to double as a critically important tool for safeguarding financial stability.

III

FROM FINANCE TO MACRO-ECONOMY: FINANCIAL INNOVATION AND PRODUCTIVE ENTERPRISE

A. The Unbearable Lightness of Financial Innovation

Financial innovation is a familiar—and in many ways, overused—term in both academic and popular discussions of finance. A great deal of what is going on in today's financial markets is routinely explained and celebrated in terms of innovative approaches to financial services, processes, and interactions. In a sense, finance is the epitome of Western capitalist culture's "ongoing romantic relationship with innovation."[33] Thanks to continuous innovation, the story goes, financial markets are growing deeper, faster, more liquid, and more accommodating of various market participants' increasingly granular needs and preferences. Yet, private innovation can (and often does) act as a double-edged sword that destroys economic value instead of creating it—and undermines the financial system's resilience instead of strengthening it.

Complex financial derivatives and structured products are vivid examples of both the good and bad sides of financial innovation.[34] On the one hand, these sophisticated financial instruments enable far more effective pricing and hedging of risk. On the other hand, they allow market participants to incur too much leverage and take on too much risk, often without understanding the full extent of their exposures. To make things even more complicated, both the socially-destructive and socially-beneficial consequences of innovation in derivatives and securitization markets flow ultimately from the same basic characteristics of these products. What matters is *the context,* the structural shifts in the markets in which these products are created and traded. This is one of the key lessons of the 2008 financial crisis.

Another complicating factor in assessing the impact of financial innovation on the economy is that many so-called innovative financial products and services are not actually novel. Instead of meeting any real market demand for new products or services, these financial instruments and technologies simply rearrange existing solutions for purposes of regulatory arbitrage, tax avoidance, or private over-leveraging. This is what the former Chairman of the Federal Reserve, Paul Volcker, meant when he famously remarked that the most important financial innovation in the last twenty years was an ATM.[35]

In short, the phenomenon of financial innovation seems to defy bright-line definitions and to confound policy judgment. One consistently ignored reason for

33. CRISTIE FORD, INNOVATION AND THE STATE: FINANCE, REGULATION, AND JUSTICE 51 (2017).

34. *See generally id.* at 27–31; ERIK GERDING, LAW, BUBBLES, AND FINANCIAL REGULATION (2013).

35. Paul Volcker, *The Only Thing Useful Banks Have Created in 20 Years is the ATM*, N.Y. POST (Dec. 13, 2009), https://nypost.com/2009/12/13/the-only-thing-useful-banks-have-invented-in-20-years-is-the-atm/ [https://perma.cc/QU4T-4EJR].

this apparent lack of normative clarity is the fact that the mainstream debate on financial innovation approaches innovation as primarily, if not entirely, a *micro-level, transactional* phenomenon. The analysis is always rooted in the technical features of individual innovations: how a particular new product is structured, how it reduces users' and counterparties' transaction costs or renders specific market interactions more efficient for the participants, and so forth. Even the broader policy-oriented discussions of financial innovation—which gained steam in the post-2008 era—are typically framed by reference to specific risk-related consequences and attributes of individual innovative products or transaction technologies.

As a result, there remains a significant gap in these discussions. After 2008, it is safe to say that we all generally agree that financial innovation should not undermine systemic stability and increase the likelihood of another major financial crisis. We generally agree, therefore, that regulators should take financial innovation very seriously and engage with this phenomenon in a far more thoughtful and careful manner than they did before 2008.[36]

Past that point, however, things get fuzzy, both normatively and analytically. We do not know exactly what does, and what does not, constitute proper innovation in financial markets from a purely functional perspective. Was Volcker's quip about the ATM right on point? Or is Bitcoin to be celebrated as the revolutionary breakthrough for all of humankind? Some of us are with Paul Volcker, and others with Satoshi Nakamoto.[37] We do not have a coherent framework for deciding whether, or under what circumstances, any novel financial product or technology is likely to be more socially beneficial than harmful. Accordingly, we do not have a clear basis for developing a coherent set of regulatory principles for engaging with—that is, understanding, evaluating, and managing—financial innovation *in the public interest*.

In order to develop such a set of principles, it is essential that we move away from the micro-level frame of reference, which emphasizes technical aspects of individual innovations and obscures potentially difficult macro-level choices and trade-offs these innovations necessitate. The first step in this intellectual enterprise is to deconstruct the reigning micro-transactional narrative of financial innovation.

This dominant notion of financial innovation is an integral part of the broader narrative of finance as intermediation of scarce private capital, discussed above.[38] That standard narrative uses *primary markets* as the archetypal setting in which financial intermediation takes place. In this setting, the "savers" of funds—presumably, real-economy actors who earned and accumulated surplus capital by producing and selling various non-financial goods and services—are said to extend loans or invest in the equity of the "users" of funds—presumably, real-

36. For an insightful post-crisis treatment of the regulatory engagement angle, see generally FORD, *supra* note 33.

37. Satoshi Nakamoto is a pseudonym used by the original inventor, or inventors, of Bitcoin.

38. *See supra* note 10 and accompanying text.

economy entrepreneurs or households that need capital to generate or stimulate production of additional non-financial goods and services. Financial "intermediaries"—banks, securities brokers, or investment funds—are viewed as mere middlemen whose sole task is to "transform" all or some of the key risk attributes embedded in these transactions.[39]

The key assumption built into this standard narrative of finance—that the typical user is seeking funds for some legitimate economic use and not for a speculative financial reinvestment—has profound implications for how we view financial innovation. It quietly supplies a rigid normative framing for the discourse on innovation. In this framing, any new financial products or transaction methods are presumptively good, because they facilitate greater or better flow of financial capital to the most deserving projects in the real economy.[40]

In practice, however, by far the largest proportion of financial exchanges takes place in *secondary* markets for trading previously issued financial instruments. In today's world, secondary markets in financial assets are far bigger, more complex, and more systemically important than primary markets.[41] And, in the vast majority of real-life financial transactions, market players borrow and issue various financial claims in order to invest in *other* financial claims. In short, unlike one-off primary-market issuances by companies seeking to fund investments in *operating* assets, secondary-market transactions are designed to fund investments in *financial* assets.[42]

It is not surprising, therefore, that today's secondary markets in financial instruments are the principal sites of both relentless transactional "innovation" and chronic over-generation of systemic risk. This is both a structural and a functional imbalance. In theory, secondary markets' main function is to support and facilitate primary capital markets by providing liquidity, price discovery, and risk-shifting opportunities for primary market participants. In reality, secondary market trading often determines the terms and volumes of primary issuances of financial claims. A clear example of these inverted dynamics is the explosive growth of risky subprime mortgage lending in the early 2000s, in response mainly to the rising demand for such loans as the raw material for mortgage-backed securities and other sophisticated structured products.[43]

---

39. This is what is typically described as maturity, liquidity, or credit risk transformation: a set of functions typically performed by banks, the quintessential "intermediaries," and replicated in part by non-bank financial institutions.

40. This is, of course, a simplification of the standard intermediation narrative, meant to expose its underlying logic.

41. Saule T. Omarova, *New Tech v. New Deal: Fintech as a Systemic Phenomenon,* 36 YALE J. REG. 735, 758 (2019) [hereinafter *New Tech v. New Deal*]; *see, e.g.*, WORLD FED'N OF EXCH., 2017 FULL YEAR MARKET HIGHLIGHTS (2018), https://www.world-exchanges.org/storage/app/media/research/Market%20high/lights/WFE%20FY%202017%20Market%20Highlights.pdf [https://perma.cc/5RML-NWEK] (providing a statistical breakdown of annual trading volumes on global exchanges).

42. *New Tech v. New Deal, supra* note 41, at 757.

43. *Id.* at 758. *See generally* GARY B. GORTON, SLAPPED BY THE INVISIBLE HAND: THE PANIC OF 2007 (2008).

This example also underscores the distorting effect of the orthodox narrative on our understanding of, and policy stance toward, financial innovation as a macro-level phenomenon. To overcome the hardy mix of incapacitating confusion and awe that financial innovation seems to instill in us, we need to redirect our attention from an idealized picture of capital-raising in primary markets to the actual dynamics of financial asset-trading in secondary markets—and to examine these dynamics from the perspective of the financial system and the broader economy.

B. Financial Innovation Through the Macro-Systemic Lens

The starting point for analyzing financial innovation as a systemic phenomenon is the fact that most of today's "innovative" financial products are produced for reasons that have little to do with capital formation (that is, canonical capital allocation) in primary markets.[44] They are bundles of financial risks and returns manufactured by financial institutions for sale to other market participants, such as portfolio investors or managers. From a *micro*-level transactional perspective, this is typically viewed as a valuable financial service. The standard economic vocabulary conveys this normative assessment in terms of "providing liquidity," "completing markets," "discovering prices," "enabling diversification and risk management," or "creating portfolio-enhancement opportunities"—the familiar language of financial innovation.

From a *macro*-level systemic perspective, this continuous manufacturing of financial products results in the continuous injection of privately-created financial risk into the system. What is missing, however, is the vocabulary for articulating this systemic perspective as a valid counterpoint to the dominant transactional view of financial innovation. Developing such a vocabulary requires a new narrative that explains how, and through which mechanisms, secondary markets in financial instruments are able to grow and proliferate.

At the most abstract level, the growth of financial markets is best understood by reference to two interrelated practices: (1) *synthesizing* financial assets, and (2) *scaling up* transactional activity. In other words, both the scope and the scale of financial markets increase when *more products* can be purchased and sold, and *more trades* can be made in these markets.

The practice of synthesizing financial assets typically involves creating new types of financial claims out of the existing ones. Common examples include creating tradable stock indices, writing options on gold, securitizing loans, and even setting up mutual funds. Here, a relatively small range of traditional financial assets—common stock, corporate bonds, loans, or commodities—serve as the base on which a potentially unlimited number of new types of financial claims are created. Importantly, the standard economic logic of supply and demand does not constrain this process. An increasing supply of tradable assets

44. This discussion adapts and condenses the argument originally formulated in *New Tech v. New Deal, supra* note 41, at 756–70.

generates an increasing demand for them, which in turn incentivizes more asset-synthesizing. Leverage plays the critical role in enabling this iterative supply-demand pattern.[45]

The related practice of "scaling up" trading activities further enables the continuous growth of financial markets. While there are numerous means of scaling up secondary trading, the development of new transactional technologies and market infrastructures plays a particularly important role in this process. Thus, the emergence of sufficiently capacious trading platforms, clearinghouses, and payment networks enables a far greater number of counterparties to consummate a far greater number of trades at far greater speeds than they otherwise could. Standardizing the terms of specific types of financial instrument is another potent tool for increasing the volume and velocity of trading in these instruments. Perhaps the best-known example of these dynamics is the success of the International Swaps and Derivatives Association (ISDA) in developing industry-wide documentation standards for over-the-counter derivatives, which effectively unlocked the explosive growth of the global derivatives market.[46]

Working in tandem, these fundamentally systemic practices of synthesizing financial assets and scaling up financial transactions profoundly affect the structure and operation of financial markets. As I have previously observed,

> creation of new financial products often leads to the emergence of new specialized markets. New actors may enter these newly created markets, while the incumbent institutions may assume new roles in them. New patterns of market concentration and systemic interdependencies emerge. Via the multitude of specific transactional channels through which the twin imperatives of synthesizing and scaling up operate, the financial market grows not only bigger and faster but also more structurally complex.[47]

So, how exactly do market participants synthesize financial assets and scale up trading activity? In other words, how do private actors "innovate?"

There are four principal mechanisms that enable financial markets' continuous reproduction and expansion: what I call "pooling," "layering," "acceleration," and "compression." These loosely delineated categories refer not to any particular type of product or transaction but rather to system-level operational principles, or embedded system functionalities supporting a wide variety of individual applications.

---

45. In that sense, today's high finance operates very much like a Starbucks coffee shop. The Starbucks business model is based on the constant invention and marketing of new, intentionally and carefully differentiated, products that create their own demand. Just like the Starbucks designer beverages, most complex financial products are manufactured from the same basic ingredients—with leverage functioning as caffeine that keeps everyone coming back for more. *See id.* at 761 n.106.

46. *See, e.g.,* Frank Partnoy, *Second-Order Benefits from Standards*, 48 B.C. L. REV. 169 (2007) (discussing the role of standardized ISDA documentation in the development of global derivatives markets); Steven L. Schwarcz & Ori Sharon, *The Bankruptcy-Law Safe Harbor for Derivatives: A Path-Dependence Analysis*, 71 WASH. & LEE L. REV. 1715 (2014) (detailing ISDA's successful campaign to secure preferential treatment of derivatives under the U.S. Bankruptcy Code, as well as under many other jurisdictions' insolvency laws).

47. *New Tech v. New Deal, supra* note 41, at 761–62.

Pooling describes the well-established market practice of combining multiple financial assets that share certain key characteristics, in order to create "a new set of financial claims backed by, or determined by reference to, the resulting asset pool."[48] This is perhaps the most ubiquitous technique in finance. Mutual funds and other collective investment vehicles are products of explicit pooling of other financial instruments—corporate stocks, bonds, and other claims issued in primary markets—in a portfolio used to back the issuance of fund shares to investors. Shares issued by individual funds, in turn, can be pooled in a fund-of-funds (FoF) portfolio backing the issuance of the FoF shares.[49] Benchmarking and creation of indices constitute similarly ubiquitous, albeit less directly visible, system-level methods of pooling securities issued in primary markets for purposes of synthesizing new tradable assets in secondary markets.[50] Among other things, major stock indices, like S&P 500 or Wilshire 5000, are used as benchmarks for—and therefore enable the emergence of—a wide variety of mutual and exchange-traded funds that track their benchmark index values.

A closely related term, *layering* refers to the technique of synthesizing financial assets in a manner that creates a chain of hierarchically linked claims, so that the performance of each new asset layer is determined by reference to the combined performance of pooled financial assets underlying it. The layering technique often involves pooling, which makes these categories difficult to separate neatly. Nevertheless, as pooling is repeated in several consecutive rounds, the distinct systemic implications of the resulting multi-layered structure built on the same set of underlying claims become increasingly pronounced.

Examples of layering include FoF and indices, mentioned above, as well as securitizations and derivatives. In a typical securitization, for example, a special purpose vehicle (SPV), which holds a portfolio of loans or other revenue-producing assets, issues tradable asset-backed bonds (ABS). These ABS are then re-bundled with other ABS in the next-layer securitization, such as a collateralized debt obligation (CDO), which issues several tranches of its own bonds. These bonds are then used as collateral to back bonds issued in the next-level securitization, so-called CDO-squared, followed by CDO-cubed, and so on.[51]

Derivatives provide another canonic example of how the layering mechanism is used both to synthesize new assets and to scale up market trading. Because the underlying asset is merely a reference point for calculating contractual payouts, there is no theoretical limit on counterparties' ability to enter into as many derivatives contracts as they desire, on any terms that they choose. This makes

48. *Id.*

49. *See, e. g.*, *Fund of Funds*, MANAGED FUNDS ASS'N, https://www.managedfunds.org/hedge-fund-investors/fund-of-funds/ [https://perma.cc/23LP-HY65].

50. For a discussion of the systemic function of benchmark prices and indices, see Robert C. Hockett & Saule T. Omarova, *Systemically Significant Prices*, 2 J. FIN. REG. 1 (2016) [hereinafter *Systemically Significant Prices*].

51. For more on securitizations, see, for example, GERDING, *supra* note 34.

derivatives the ultimate tool for synthesizing a potentially infinite number of tradable financial products on top of any single underlying asset.

Acceleration occurs whenever the speed of transacting is increased, thus allowing more trades to be executed. Algorithmic, or high-frequency, trading (HFT)—a strategy that uses complex algorithms to execute trades at speeds far exceeding human ability—is an easy example of acceleration. But the acceleration mechanism also works in less obvious ways, often in conjunction with the pooling and layering mechanisms. Thus, the very act of synthesizing a new tradable asset may help to increase the aggregate volume and velocity of market transactions. The creation of a new asset eliminates potentially significant transactional costs of placing multiple trades that would otherwise be required in order to achieve the same economic exposure. It makes trading faster and cheaper relative to trading in the underlying assets themselves, which in turn leads to surging levels of trading activity. Indexing, derivatives, securitizations, and many other financial instruments and market practices exemplify these dynamics.

Finally, *compression* refers to the general technique of aggregating and compacting risk exposures and payment obligations arising under multiple trades between the same counterparties, thus effectively turning these trades into a single economic transaction.[52] A classic example of this mechanism is netting, a common practice of offsetting mutual payment obligations of transacting parties in order to facilitate the back-office process of clearing and settlement of multiple trades between them.[53] By eliminating unnecessary flows of funds and associated frictions in the process, netting optimizes and reduces counterparties' risk. By replacing multiple gross transfers due throughout the day with a single net transfer at the end of it, netting also enables a far greater amount of trading to take place. From that perspective, the widespread use of netting and trade compression has an important, and routinely under-appreciated, systemic effect: it empowers financial market participants to engage in secondary-market trading on a far greater scale, and at far greater speeds, than would be sustainable in the less forgiving world of gross settlement of trading obligations. In this sense, compression is more than simply a risk-reducing micro-level application—it is a system-level functionality for scaling up secondary markets in financial instruments.

In sum, the combined operation of these four transaction meta-technologies—pooling, layering, acceleration, and compression—enables and explains both the continuous quantitative growth and the ever-increasing qualitative complexity of modern financial markets. Importantly, these are also the core mechanisms of financial innovation. Much of what is routinely labeled

52. *New Tech v. New Deal, supra* note 41, at 765–66. In that sense, it is broader than "trade compression," a term of art denoting a common practice in derivatives trading that involves reducing the number of derivatives contracts while keeping the same net economic exposure. *See id.* at 766.

53. Netting is also used to offset other obligations, such as those related to posting of collateral under derivatives or repo agreements.

as "innovation" in financial markets is, in fact, a product of creative deployment of pooling, layering, acceleration, and compression techniques in a particular context or with the help of a particular technology.[54] Accordingly, much of it is fundamentally self-referential: it is innovation *in* financial markets *for the sake* of financial markets.

The "innovative" nature of newly-created financial products and market practices, therefore, should not be confused with, or reduced to, their narrowly technical or micro-level transactional aspects. Such an approach produces only a superficial understanding of what a particular market innovation signifies. To the contrary, the social value of individual innovations in financial markets should be determined on *normative* grounds, by reference to their *macro-level* impact—that is, their impact not only on the financial system but, importantly, on the real economy.[55]

As the above examples show, most financial "innovations" in recent decades successfully sought to blunt, or even eliminate, the fundamental structural constraint on the growth of secondary financial markets: the exogenously limited volume of instruments issued in the primary markets. Financial innovation helped to sever the key functional link between finance and non-financial economic enterprise. Ignoring this macro-level consequence of the unchecked growth and complexification of secondary financial markets, in effect, enables the self-perpetuating entrapment of financial resources inside the increasingly bloated and self-serving financial system.

It follows, therefore, that the task of evaluating and regulating financial innovation from a systemic perspective requires explicit prioritization of the potential macro-level benefits (or losses) over private counterparties' micro-level transactional gains. In fact, it is easy to stipulate that new financial products or technologies are designed to produce specific benefits to the transacting parties. The critical unknown element of any such innovation is whether it would improve the flow of capital from the financial system to the productive enterprise in the real economy. Putting system-wide capital allocation at the center of the inquiry brings into sharp relief the fact that financial innovation is not simply a matter of financial markets' internal operation but also a matter of the nation's long-term economic development.

Giving financial regulators a clear conceptual and normative framework for understanding individual financial instruments and markets would help them to exercise an independent and properly contextualized judgment in their daily encounters with specific problems in financial markets. Stripping the notion of financial innovation of its mystique would significantly lessen the potential for a

54. *New Tech v. New Deal, supra* note 41, at 767.

55. In this sense, the proposed approach deliberately broadens the analytic focus beyond the familiar discussion of regulatory arbitrage and its role in spurring such innovations as money market mutual funds, complex derivatives and securitized products, and so forth.

particularly insidious form of regulatory capture, known as cultural or intellectual capture.[56]

A potentially more radical method of operationalizing this explicitly macro-structural approach to financial innovation would be to introduce a system of mandatory pre-approval of financial products.[57] Among other things, a properly designed product approval regime would provide a procedural mechanism for ensuring that financial innovation and the creation of complex financial instruments do, in fact, advance productive economic enterprise and offer real public benefits—as opposed to merely fueling financial speculation and regulatory arbitrage.

For example, such a regime could require private firms to demonstrate to the regulators that each financial product they intend to bring to the market meets three statutory tests. First, the applicant-firm would have to show that its proposed offering meets an "economic purpose" test that would focus on the social and commercial utility of the proposed financial product or service. Meeting this requirement would involve, among other things, identifying the actual gap in the existing market that the new offering would fill and the intended users whose unmet needs this new offering would serve. Second, the applicant-firm would have to pass an "institutional capacity" test that would require a review of its ability to manage the risks associated with the proposed offering and to monitor relevant market dynamics on an ongoing basis. Finally, the proposal would have to pass a broad "systemic effects" test, which would require a finding that approving the new product offering would not significantly reduce the overall resilience of the financial system or otherwise raise significant public policy concerns.[58]

In essence, this approach would function as a simple burden-shifting device, by imposing the duty to provide information necessary for evaluating potential macro-systemic risks and benefits of a specific financial product on the party that has the best access to such information.[59] While not limited solely to licensing of innovative financial products, this regime would create a critical institutional space for ongoing collective deliberation on the social function of financial innovation. Of course, designing a workable regime of financial product approval is a complex undertaking bound to raise multiple legal, economic, and political questions. For the purposes of this Article, however, the key is simply to show how law can serve as a potent tool of restoring a healthy functional relationship between the financial system and the real economy.

---

56. *See, e.g.,* James Kwak, *Cultural Capture and the Financial Crisis*, *in* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 71 (Daniel Carpenter & David A. Moss eds., 2014).

57. For a detailed proposal, see Saule T. Omarova, *License to Deal: Mandatory Approval of Complex Financial Products*, 90 WASH. U. L. REV. 64 (2012).

58. *Id.* at 67.

59. For an in-depth discussion of various operational and institutional design issues raised by this proposal, see *id*. at 113–40.

Importantly, this relationship can also be restored or enhanced through policies and institutional reforms directly targeting the process of credit allocation. In particular, properly designed and implemented measures spurring and supporting a structurally balanced economic development can have a direct salutary effect on the financial system.

IV

FROM MACRO-ECONOMY TO FINANCE: DEVELOPMENTAL POLICY AND FINANCIAL STABILITY

A. Individual Rationality, Collective Irrationality

Expanding the focus of the inquiry into the nature of modern finance to encompass its functional relationship to the macro-economy helps to elucidate fundamental dynamics that currently impede efforts both to stabilize the financial system and to stimulate economic growth. It brings into sharp relief the basic fact that the persistent lack of success in achieving both of these policy goals is rooted ultimately in our failure to effectively address the underlying collective action problems.

Generally, the term "collective action problems" denotes situations in which the multitude of individually rational actions ultimately produce a suboptimal—collectively irrational—outcome.[60] Financial markets, in particular, are rife with collective action problems that have a recursive quality.[61] Financial asset bubbles, fueled by short-term speculation and followed by devastating busts, exemplify this phenomenon. While it is individually rational for each market player to purchase assets during the bubble phase and sell them during the bust phase, these mutually reinforcing, individually rational decisions aggregate into collectively dysfunctional outcomes: financial crises.[62]

These dysfunctional dynamics directly contribute to the pattern of systematic under-provision of critical public infrastructure and other public—or, more precisely, *collective*—goods necessary to support economic development.[63] One such collective good is so-called "patient capital," deployed to finance long-term productive projects like power grids, railway networks, large-scale manufacturing ventures, and so forth. In effect, the patient capital problem is a special case of the "speculative-versus-productive-investment" problem. In both cases, the worry is that investors do not part with their money long enough to allow certain

60. *See generally Public Actors, supra* note 24.

61. For more on market procyclicality as a recursive collective action problem, see generally Robert C. Hockett, *Recursive Collective Action Problems: The Structure of Procyclicality in Financial and Monetary Markets, Macroeconomies, and Formally Similar Contexts*, 3 J. FIN. PERSP. 1 (2015) [hereinafter *Recursive Collective Action Problems*].

62. *Id*. at 17–22.

63. For a detailed discussion of the distinction between what the orthodox economic literature typically refers to as "public goods" and the more capacious concept of "collective goods," see Robert C. Hockett & Saule T. Omarova, *Private Wealth and Public Goods: A Case for a National Investment Authority*, 43 J. CORP. L. 437, 444–48 (2018) [hereinafter *National Investment Authority*].

projects to be brought to completion. The chronic shortage of patient capital, which hinders the healthy growth of the real economy, is simply a version of the same problem in the context of particularly long-term projects.[64] Understanding the factors underlying this problem, therefore, is the key to correcting it.

For individual investors, committing to being "patient" in terms of getting their payoff involves significant risks. The longer the time horizon of the project in question, the more uncertainty private investors face. That uncertainty comes from two principal sources.

First, in order to make a long-term investment rational for the investors, they have to be able to rely on the stability of the macro-environment, which they cannot control in their individual capacities. This includes not just the prevailing interest rates, but also a wide range of other systemically important prices and indices, or SIPIs: commodity and energy prices, wage levels, housing prices, and so on.[65]

Second, private investors are rationally averse to investing in long-term projects whose benefits cannot be fully captured by private investors, partly because they are yielded over time-horizons that exceed biological lifespans. Certain kinds of public infrastructure that take a long time to develop or construct, technological advances rooted in long-term investment in research and development, the long-term synergistic knowledge and cultural benefits of widespread higher education, and ultra-long-term projects as space exploration or medical research are some examples of such projects.

Under these circumstances, it is rational for private investors to withhold their money and divert it into shorter-term investments, especially if they offer higher returns. Both of these factors—the *non-controllability* of the macro-environment and the *non-capturability* of the benefits—effectively discourage long-term productive investment in primary markets and instead encourage short-term investments in secondary markets for tradable financial instruments.[66] This is the essence of the collective action problems pervading decentralized market economies.

Drawing these collective action problems out exposes the crucial link between the growing structural imbalances in the capital-starved real economy and the concomitant growth of systemically destabilizing speculative trading in financial markets. A self-referential financial system, in which disproportionate growth on the part of secondary markets encourages heavy speculative trading in financial instruments, is bound to experience socially destructive asset price bubble-and-bust cycles. By contrast, reorienting the financial system toward its

64. *Id.* at 450 n.53.

65. For a detailed analysis of SIPIs as a financial market phenomenon, see *Systemically Significant Prices, supra* note 50.

66. For a detailed discussion of *non-controllability* and *non-capturability* in the context of the collective goods provision (or, rather, under-provision), see *National Investment Authority*, *supra* note 62, at 448–54.

primary social function—allocating credit to its most productive and beneficial long-term non-financial uses—will likely alter its present dysfunctional dynamics.

Understanding this fundamental connection enables us to focus on devising *systemic* solutions to the systemic speculative-versus-productive-investment problem—and do so both as a matter of developmental strategy and for purposes of maintaining financial stability. Avoiding this collective irrationality necessarily requires coherent collective agency, exercised counter-cyclically.[67] It requires a particular kind of a market actor: one whose actions are not constrained by the same dictates of individual rationality that make everyone else herd into the same type of hot speculative investment, and who is both able and willing to take the opposite side of that collectively irrational bet. This *market contrarian* role is essential to the stable functioning of the financial market, as it effectively operates as the internal mechanism of dynamic countercyclical self-regulation. Moreover, it shapes the structural conditions in the financial market in ways that make such speculative investments not only collectively but also individually irrational for private market participants.

In theory, private entities can act in a collective agent capacity. In practice, however, "only public instrumentalities acting directly within financial markets are fully equipped to perform this critical function."[68] Public instrumentalities' unique built-in advantages—large size, access to public funding, long-term investment horizon, legal and regulatory privileges—enable them to take on greater risk at times when no private market actor is able to do so.[69] In this sense, public instrumentalities are the true "natural" market contrarians. Even the biggest private firms are inherently incapable of performing this role reliably and consistently.

So, what might the collective agent capable of correcting the presently dysfunctional pattern of system-wide capital allocation look like?

B. Developmental Policy as a (Real) Macroprudential Tool

One potential approach to remedying the problems discussed above is to organize the provision of currently under-provided collective goods as a hybrid public-private project. Two elements are crucial to the success of such a strategy: (1) a dedicated public institution, capable of actively managing and channeling privately-supplied capital into projects that require the patience of a perpetual transgenerational investor; and (2) a distinct kind of financial engineering that synthesizes individually capturable returns on investment in collective goods whose benefits otherwise cannot be captured individually.[70]

An example of a policy combining both of these elements would involve an establishment of a new federal instrumentality—what may be called a National

67. *See generally Recursive Collective Action Problems, supra* note 61, at 23–32.

68. Omarova, *supra* note 15, at 2523 (citing *Recursive Collective Action Problems, supra* note 61, at 24).

69. *See Public Actors, supra* note 24, at 138.

70. *See National Investment Authority*, *supra* note 63, at 451.

Investment Authority (NIA)—charged with developing and implementing a comprehensive strategy of national economic development.[71] This new instrumentality would operate as a true hybrid public-private market actor, enabling private investors to overcome currently insurmountable collective action problems that render investment in long-term public infrastructure projects individually irrational.

In highly simplified and abbreviated terms, the NIA would function much like a typical Wall Street asset manager. It would set up a series of collective investment funds (structured similarly to traditional private equity funds), actively solicit private investors to purchase passive equity stakes in its funds, and act as the sponsor and general partner of each individual fund it sets up.[72] As with many private funds, it would require private partners to lock up all or some part of their investment dollars with the fund for some set minimum period of time. The NIA would manage the resultant pool of assets much as any private fund manager would do, assembling a diversified portfolio of promising investment projects.[73]

Reversing the fundamental logic of a traditional public-private partnership model, this new entity would channel the enormous amounts of private capital held by pension funds, insurance companies, university endowments, banks, foreign sovereign wealth funds, and other institutional investors into the coordinated construction and maintenance of large-scale, economic growth-boosting infrastructures. Examples of such transformative public infrastructures would include nationwide networks of clean energy provision and state-of-the-art transportation, regional air and water cleaning and preservation programs, systems of ongoing adult education and technical training, and networks of mixed public-private startup finance funds.

As discussed above, private investors are often unwilling to finance such socially beneficial projects, primarily because of the longer time horizons and higher private risks associated with the provision of collective goods. The NIA would act directly and proactively to alleviate these risks. By deliberately exploiting the unique advantages of the federal government—its vast scale, high risk tolerance, lengthy investment horizons, and direct backing by the full faith and credit of the United States—the NIA would enable private investors to capture reasonable gains from the provision of currently under-provided, transformative collective goods.[74]

The key to achieving this goal is the NIA's ability to *synthesize* privately payable "equity strips" that reflect otherwise non-capturable public gains from the provision of collective goods.[75] Reaping the benefits of scale economies and

71. For a detailed proposal, see *National Investment Authority*, *supra* note 63.

72. *See id.* at 475–80 (outlining the general structure and functions of the NIA as an asset manager).

73. For a discussion of the project selection process, see *id.* at 484–85.

74. *Id.* at 446–58.

75. For a detailed discussion of the specific methods and techniques of financial and legal engineering the NIA could adapt to this end, see *id.* at 469–90.

recapturing positive externalities associated with the nation-wide provision of collective goods—including the positive effects of the NIA-financed infrastructure projects on employment and income tax revenues—would augment the federal government's ability to offer or guarantee stipulated returns to private investors in NIA funds.

These synthetic equity payouts would vary depending on the estimates of local, regional, or national macroeconomic impacts of NIA funds' projects.[76] If, for example, experts calculate that a particular fund's investments would generate an additional three percent in local or regional economic growth over a certain period of time, the NIA would translate that projected gain into a corresponding added return for the fund's limited partners. This method of synthesizing privately capturable profits would add another potentially significant source of revenues—on top of project-specific user-payment schemes for projects amenable to this form of cost-recovery. It would allow the government to compensate, and further incentivize, those private parties who assist in the funding of the nation's economic development.[77]

In this sense, the NIA would also perform the critical role of an endogenous financial market stabilizer. By offering yield-hungry private institutional investors a flexible new safe asset class, the NIA would diffuse potentially destabilizing demand for privately-issued substitutes and channel it into non-speculative, longer-term productive investments.[78] The availability of this new asset class can significantly alter the dynamics of contemporary financial markets. By draining large institutional investors' demand away from riskier and more speculative assets, the NIA would dissipate, at least in part, a powerful structural incentive for private financial institutions to supply such risky assets. In that sense, the NIA would function as a critically important institutional mechanism for enhancing systemic financial stability, which is itself a fundamental collective good.[79]

---

76. Of course, the NIA funds' portfolios would also include projects that, upon completion, would generate sufficient user-fee revenues to serve as a source of investor returns. The ability to replicate private returns from the provision of systemically important collective goods, however, is critical for financing forward-looking infrastructure projects that are not likely to generate sufficient user fee revenues, or are otherwise not amenable to imposition of such fees.

77. *See National Investment Authority*, *supra* note 63, at 477–78.

78. For examples of the growing economic literature on "safe assets," and government liabilities as "safest of the safe," see generally MARCUS BRUNNERMEIER & VALENTIN HADDAD, FED. RESERVE BANK OF N.Y., *Safe Assets*, (Oct. 17, 2014), https://www.newyorkfed.org/medialibrary/media/aboutthefed/pdf/FAR_Oct2014.pdf [https://perma.cc/P7Z2-YGEZ]; GARRY J. SCHINASI ET AL., INT'L MONETARY FUND, FINANCIAL IMPLICATIONS OF THE SHRINKING SUPPLY OF U.S. TREASURY SECURITIES (Mar. 20, 2001), https://www.imf.org/external/pubs/ft/supply/2001/eng/032001.PDF [https://perma.cc/7M4N-P2ML]; Gary Gorton et al., *The Safe-Asset Share*, 102 AM. ECON. REV. 101 (2012); Arvind Krishnamurthy & Annette Vissing-Jorgensen, *The Aggregate Demand for Treasury Debt*, 120 J. POL. ECON. 233 (2012); Pierre-Olivier Gourinchas & Olivier Jeanne, *Global Safe Assets*, (Bank for Int'l Settlements Working Paper No. 399, 2012), http://www.bis.org/events/conf120621/gourinchas/_presentation_new.pdf [https://perma.cc/7VXN-KGBE].

79. Systemic financial stability is a public good insofar as it addresses the non-controllability problem, discussed above. *See supra* note 66 and accompanying text.

Of course, such an ambitious and far-reaching institutional reform raises a wide range of complex legal, economic, and political issues.[80] Developing detailed solutions to these problems is beyond the scope of this Article. For present purposes, the key takeaway is much broader. If thoughtfully designed and implemented, this innovative reform would open new opportunities for a more effective channeling of financial capital into productive economic enterprise, as opposed to socially harmful speculation in financial instruments. In this sense, it would significantly enhance the long-term stability and resilience of the U.S. financial system—and blunt some of the key underlying systemic factors that currently hinder the ability of traditional regulatory solutions to deliver their intended results in practice. In a holistic fashion, an effective *structural* rebalancing of the nation's real economy would also help to rebalance, both structurally and functionally, its financial system.

V

CONCLUSION

This Article sought to shift the academic and policy discussions from the familiar question "Can there be too much finance?" to the bigger and more complicated question: "*What kind* of finance should there be?" As the first step toward answering this multi-faceted question, this Article engaged in an intellectual experiment, an attempt to explore what a truly effective *macro-systemic* approach to financial markets and regulation might look like. It argued that, to be effective, such an approach has to address, in a holistic and direct manner, both (1) the traditionally technical issues of financial stability and innovation, and (2) the broader, normatively salient issues of sustainable and structurally balanced socioeconomic development.

Adopting this approach, however, requires a fundamental rethinking of the core concepts and assumptions that currently preclude us from recognizing the deep structural linkages between these two policy challenges—and thus hinder our ability to formulate a coherent, normatively unified strategy of overcoming them. This Article outlined an alternative framework for devising such a macro-level strategy. Of course, there is much more work to be done in order to flesh out and operationalize in greater detail the ideas laid out in this Article—and to find definitive answers to the question in its title. It is undoubtedly challenging but also exciting and necessary work.

80. For an in-depth discussion of the institutional design and implementation issues in connection with this proposal, see *National Investment Authority*, *supra* note 63, at 480–90.